Connecting via Winsock to STN

Welcome to STN International! Enter x:X

LOGINID:ssspta1814txs

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	JAN 12	Match STN Content and Features to Your Information Needs, Quickly and Conveniently
NEWS 3	JAN 25	Annual Reload of MEDLINE database
NEWS 4	FEB 16	STN Express Maintenance Release, Version 8.4.2, Is Now Available for Download
NEWS 5	FEB 16	Derwent World Patents Index (DWPI) Revises Indexing of Author Abstracts
NEWS 6	FEB 16	New FASTA Display Formats Added to USGENE and PCTGEN
NEWS 7	FEB 16	INPADOCDB and INPAFAMDB Enriched with New Content and Features
NEWS 8	FEB 16	INSPEC Adding Its Own IPC codes and Author's E-mail Addresses
NEWS 9	APR 02	CAS Registry Number Crossover Limits Increased to 500,000 in Key STN Databases
NEWS 10	APR 02	PATDPAFULL: Application and priority number formats enhanced
NEWS 11	APR 02	DWPI: New display format ALLSTR available
NEWS 12	APR 02	New Thesaurus Added to Derwent Databases for Smooth Sailing through U.S. Patent Codes
NEWS 13	APR 02	EMBASE Adds Unique Records from MEDLINE, Expanding Coverage back to 1948
NEWS 14	APR 07	CA/CAplus CLASS Display Streamlined with Removal of Pre-IPC 8 Data Fields
NEWS 15	APR 07	50,000 World Traditional Medicine (WTM) Patents Now Available in CAplus
NEWS 16	APR 07	MEDLINE Coverage Is Extended Back to 1947
NEWS 17	JUN 16	WPI First View (File WPIFV) will no longer be available after July 30, 2010
NEWS 18	JUN 18	DWPI: New coverage - French Granted Patents
NEWS 19	JUN 18	CAS and FIZ Karlsruhe announce plans for a new STN platform
NEWS 20	JUN 18	IPC codes have been added to the INSPEC backfile (1969-2009)
NEWS 21	JUN 21	Removal of Pre-IPC 8 data fields streamline displays in CA/CAplus, CASREACT,and MARPAT
NEWS 22	JUN 21	Access an additional 1.8 million records exclusively enhanced with 1.9 million CAS Registry Numbers -- EMBASE Classic on STN

NEWS EXPRESS FEBRUARY 15 10 CURRENT WINDOWS VERSION IS V8.4.2,
AND CURRENT DISCOVER FILE IS DATED 15 JANUARY 2010.

```
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items

Enter NEWS followed by the item number or name to see news on that
specific topic.

  All use of STN is subject to the provisions of the STN customer
  agreement.  This agreement limits use to scientific research.  Use
  for software development or design, implementation of commercial
  gateways, or use of CAS and STN data in the building of commercial
  products is prohibited and may result in loss of user privileges
  and other penalties.

* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 13:54:27 ON 21 JUN 2010

=> file medline hcaplus biosis biotechds scisearch embase
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.22       0.22

FILE 'MEDLINE' ENTERED AT 13:55:14 ON 21 JUN 2010

FILE 'HCAPLUS' ENTERED AT 13:55:14 ON 21 JUN 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'BIOSIS' ENTERED AT 13:55:14 ON 21 JUN 2010
Copyright (c) 2010 The Thomson Corporation

FILE 'BIOTECHDS' ENTERED AT 13:55:14 ON 21 JUN 2010
COPYRIGHT (C) 2010 THOMSON REUTERS

FILE 'SCISEARCH' ENTERED AT 13:55:14 ON 21 JUN 2010
Copyright (c) 2010 The Thomson Corporation

FILE 'EMBASE' ENTERED AT 13:55:14 ON 21 JUN 2010
Copyright (c) 2010 Elsevier B.V. All rights reserved.

=> s (pyrroloquinoline quinone glucose dehydrogenase or PQQGDH) and cytochrome
L1          24 (PYRROLOQUINOLINE QUINONE GLUCOSE DEHYDROGENASE OR PQQGDH) AND
               CYTOCHROME

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2           11 DUP REM L1 (13 DUPLICATES REMOVED)

=> d l2 1-11 ibib ab

L2   ANSWER 1 OF 11  HCAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:        2009:385390  HCAPLUS  Full-text
DOCUMENT NUMBER:         150:359900
TITLE:                   Access disconnect detection using glucose and method
                         of detecting blood leakage
INVENTOR(S):             Rohde, Justin B.
PATENT ASSIGNEE(S):      Baxter International Inc., USA; Baxter Healthcare S.
                         A.
SOURCE:                  PCT Int. Appl., 27pp.; Chemical Indexing Equivalent to
```

150:359881 (US)
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2009042260	A1	20090402	WO 2008-US66092	20080606
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 20090082653	A1	20090326	US 2007-860071	20070924
CA 2698733	A1	20090402	CA 2008-2698733	20080606
EP 2195046	A1	20100616	EP 2008-770310	20080606
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, AL, BA, MK, RS				

PRIORITY APPLN. INFO.: US 2007-860071 A 20070924
WO 2008-US66092 W 20080606
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB An access disconnect sensor for a patient undergoing extracorporeal blood processing includes an electrochem. fuel cell or sensor to detect blood leakage. The fuel cell includes circuitry for oxidizing glucose in the blood. The sensor also includes a transmitter to send a signal to a remote receiver that the sensor indicates the presence of blood. The circuitry may include a battery or may use electricity generated by the sensor to send a signal indicating a leak of blood or disconnection of the access needle.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:363962 HCAPLUS Full-text
DOCUMENT NUMBER: 150:359881
TITLE: Access disconnect detection using glucose and method of detecting blood leakage
INVENTOR(S): Rohde, Justin B.
PATENT ASSIGNEE(S): Baxter International Inc., USA; Baxter Healthcare S.A.
SOURCE: U.S. Pat. Appl. Publ., 15pp.; Chemical Indexing Equivalent to 150:359900 (WO)
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20090082653	A1	20090326	US 2007-860071	20070924
CA 2698733	A1	20090402	CA 2008-2698733	20080606

WO 2009042260 A1 20090402 WO 2008-US66092 20080606
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
EP 2195046 A1 20100616 EP 2008-770310 20080606
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, AL, BA, MK, RS
US 20090105627 A1 20090423 US 2008-337300 20081217
PRIORITY APPLN. INFO.: US 2007-860071 A 20070924
WO 2008-US66092 W 20080606

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An access disconnect sensor for a patient undergoing extracorporeal blood processing includes an electrochem. fuel cell or sensor to detect blood leakage. The fuel cell includes circuitry for oxidizing glucose in the blood. The sensor also includes a transmitter to send a signal to a remote receiver that the sensor indicates the presence of blood. The circuitry may include a battery or may use electricity generated by the sensor to send a signal indicating a leak of blood or disconnection of the access needle.

L2 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2007:78986 HCAPLUS Full-text
DOCUMENT NUMBER: 146:311784
TITLE: The application of engineered glucose dehydrogenase to a direct electron-transfer-type continuous glucose monitoring system and a compartmentless biofuel cell
AUTHOR(S): Okuda, J.; Yamazaki, T.; Fukasawa, M.; Kakehi, N.; Sode, K.
CORPORATE SOURCE: Biomaterials Center, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan
SOURCE: Analytical Letters (2007), 40(3), 431-440
CODEN: ANALBP; ISSN: 0003-2719
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Continuous glucose monitoring (CGM) is expected to become an ideal way to monitor glycemic levels in diabetic patients. Biofuel cells can be used as an alternative energy source in future implantable devices, such as implantable glucose sensors in the artificial pancreas. Glucose dehydrogenase from Acinetobacter calcoaceticus, which harbors pyrroloquinoline quinone as the prosthetic group (PQQGDH), is one of the enzymes most attractive as a glucose sensor constituent and as the anode enzyme in biofuel cells, due to its high catalytic activity and insensitivity to oxygen. However, the application of PQQGDH for these purposes is inherently limited because an electron mediator is required for the electron transfer to the electrode. The authors have recently reported on the development of an engineered enzyme, quinohemoprotein glucose dehydrogenase (QH-GDH), in which the cytochrome c domain of the quinohemoprotein ethanol dehydrogenase (QH-EDH) was fused with PQQGDH, to enable electron transfer to the electrode in the absence of an artificial mediator. In this study, the authors constructed a direct electron-transfer-type CGM system employing QH-GDH. This CGM system showed sufficient

current response and high operational stability. Furthermore, the authors successfully constructed a compartmentless biofuel cell employing QH-GDH. OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2005:300480 HCAPLUS Full-text
DOCUMENT NUMBER: 142:370305
TITLE: Glucose dehydrogenase/cytochrome fusion protein for glucose sensor
INVENTOR(S): Sode, Koji
PATENT ASSIGNEE(S): Japan
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005030807	A1	20050407	WO 2004-JP14575	20040928
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
GB 2421951	A	20060712	GB 2006-6955	20040928
GB 2421951	B	20080227		
US 20070267301	A1	20071122	US 2006-574085	20060330
PRIORITY APPLN. INFO.:			JP 2003-340092 A	20030930
			WO 2004-JP14575 W	20040928

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB A pyrroloquinolinequinone glucose dehydrogenase (PQQGDH)/ cytochrome fusion protein is disclosed. As PQQGDH, an use can be made of, for example, water-soluble PQQGDH derived from Acinetobacter calcoaceticus. As cytochrome, an use can be made of, for example, an electron transport domain of quinohemoprotein ethanol dehydrogenase of Comamonas testosteroni. In this fusion protein, an intramol. electron transfer from PQQ being an oxidation-reduction center to cytochrome occurs. Accordingly, a direct electron transport-type glucose sensor not needing any electron mediator can be produced by the use of the fusion protein.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2004:702629 HCAPLUS Full-text
DOCUMENT NUMBER: 142:151093
TITLE: Engineered PQQ glucose dehydrogenase-based enzyme sensor for continuous glucose monitoring
AUTHOR(S): Okuda, Junko; Wakai, Junko; Igarashi, Satoshi; Sode, Koji

CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, Japan
SOURCE: Analytical Letters (2004), 37(9), 1847-1857
CODEN: ANALBP; ISSN: 0003-2719
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Continuous glucose monitoring (CGM) is expected to become an ideal way to monitor the glycemic level of diabetic patients. A recent trend in the disposable self blood glucose sensing development has been the use of pyrroloquinoline quinone-harboring glucose dehydrogenase (PQQGDH). However, due to a number of limitations of PQQGDH, conventionally utilized glucose oxidase (GOD) remains widely utilized in CGM. Two major problems that arose in the application of PQQGDH for CGM are the poor stability and its requirement for artificial electron acceptors for electrochem. measurement. To solve these problems, we investigated the amenability of our engineered PQQGDH Ser415Cys, which has a far superior thermal stability over the wild-type enzyme, for the CGM system, and the applicability of cyt b562 as the electron mediator to construct a CGM system free of synthetic mediator. As a result, the operational stability of CGM system employing Ser415Cys co-immobilized with cyt b562 was far superior to that of the wild-type enzyme-based electrode, with more than 60% of the initial response observed after 72 h at 37°. We achieved the successful application of PQQGDH in continuous operation without a significant decrease in the sensor signal. OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 11 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
DUPLICATE 4
ACCESSION NUMBER: 2004:173352 BIOSIS Full-text
DOCUMENT NUMBER: PREV200400174897
TITLE: PQQ glucose dehydrogenase with novel electron transfer ability.
AUTHOR(S): Okuda, Junko; Sode, Koji [Reprint Author]
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, 2-24-16 Nakamachi, Koganei, Tokyo, 184-8588, Japan
sode@cc.tuat.ac.jp
SOURCE: Biochemical and Biophysical Research Communications, (February 13 2004) Vol. 314, No. 3, pp. 793-797. print.
CODEN: BBRCA9. ISSN: 0006-291X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 31 Mar 2004
Last Updated on STN: 31 Mar 2004

AB PQQ glucose dehydrogenase from Acinetobacter calcoaceticus (GDH-B) is one of the most industrially attractive enzymes, as a sensor constituent for glucose sensing, because of its high catalytic activity and insensitivity to oxygen. We attempted to engineer GDH-B to enable electron transfer to the electrode in the absence of artificial electron mediator by mimicking the domain structure of the quinohemoprotein ethanol dehydrogenase (QH-EDH) from Comamonas testosteroni, which is composed of a PQQ-containing catalytic domain and a cytochrome c domain. We genetically fused the cytochrome c domain of QH-EDH to the C-terminal of GDH-B. The constructed fusion protein showed not only intra-molecular electron transfer, between PQQ and heme of the cytochrome c domain, but also electron transfer from heme to the electrode, thereby allowing the construction of a direct electron transfer-type glucose sensor.

L2 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 2004:542873 HCAPLUS Full-text
DOCUMENT NUMBER: 141:273433
TITLE: Molecular engineering of PQQGDH and its applications
AUTHOR(S): Igarashi, Satoshi; Okuda, Junko; Ikebukuro, Kazunori; Sode, Koji
CORPORATE SOURCE: National Institute for Materials Science, 1-1, Namiki, Tsukuba, Ibaraki, 305-0044, Japan
SOURCE: Archives of Biochemistry and Biophysics (2004), 428(1), 52-63
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Pyrroloquinolinequinone glucose dehydrogenases (PQQGDHs) are the most industrially attractive enzymes, especially PQQGDH-B employing glucose sensors are already in the market. To develop an ideal glucose sensor enzyme, therefore we have constructed and characterized several engineered PQQGDH-Bs. The engineered enzymes will give effective information about unknown properties on PQQGDH-B such as reaction mechanism, substrate inhibition system, and neg. cooperativity. Of equal importance, the application of the thermostable PQQGDH-B is not limited to the development of continuous glucose monitoring system, biofuel cell, and DNA sensors. In addition, co-immobilizing electron transfer protein such as cytochrome c and cytochrome b562, we have developed the sensor system that showed 30-fold greater response. Furthermore, mimicking the domain structure of QH-EDH, we constructed fusion protein, QH-GDH, allowing the construction of a direct electron transfer-type glucose sensor. To the future, combining the engineered PQQGDH-B with the application of cytochromes instead of artificial electron mediator, we will construct and develop the ideal glucose sensor and other applications. OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)
REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 11 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 2003187562 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12706581
TITLE: Glucose enzyme electrode using cytochrome b(562) as an electron mediator.
AUTHOR: Okuda Junko; Wakai Junko; Yuhashi Noriko; Sode Koji
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, 2-24-16 Nakamachi, Koganei, 184-8588, Tokyo, Japan.
SOURCE: Biosensors & bioelectronics, (2003 May) Vol. 18, No. 5-6, pp. 699-704.
Journal code: 9001289. ISSN: 0956-5663. L-ISSN: 0956-5663.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: (COMPARATIVE STUDY)
(EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200404
ENTRY DATE: Entered STN: 23 Apr 2003
Last Updated on STN: 14 Apr 2004
Entered Medline: 13 Apr 2004
AB We demonstrate the construction of glucose sensors employing pyrroloquinoline quinone (PQQ) glucose dehydrogenase (PQQGDH) from Acinetobacter calcoaceticus

and glucose oxidase (GOD) from Aspergillus nigar coupled with Escherichia coli soluble cytochrome b(562) (cyt b(562)) as electron acceptor. PQQGDH and GOD do not show direct electrochemical recycling of the prosthetic group at the electrode surface leading to a corresponding current signal. We constructed PQQGDH and GOD electrodes co-immobilized with 100-fold molar excess of cyt b(562) and investigated the electrochemical properties without synthetic electron mediators. PQQGDH/cyt b(562) and GOD/cyt b(562) electrodes both responded well to glucose whereas no current increase was observed from the electrode immobilizing enzyme alone. The detection limits for the PQQGDH/cyt b(562) and GOD/cyt b(562) electrodes were 0.1 and 0.8 mM, respectively, and their linearity extended to over 2 and 9 mM, respectively. These results demonstrate that a sensor system can be constructed without a synthetic electron mediator by using a natural electron acceptor. Furthermore, we have demonstrated the potential application of cyt b(562) in direct electron transfer type sensor systems with oxidoreductases whose quaternary structure do not contain any electron transfer subunit.

L2 ANSWER 9 OF 11 BIOTECHDS COPYRIGHT 2010 THOMSON REUTERS on STN
ACCESSION NUMBER: 2003-03957 BIOTECHDS Full-text
TITLE: Oxygen (enzyme) electrodes based on oxidoreductase and electron transfer protein, applicable in (bio)sensors e.g. for measuring serum glucose value as well as cholesterol and fructosylamine concentrations;
enzyme immobilization on enzyme electrode for biosensor construction and oxygen analysis
AUTHOR: SODE K
PATENT ASSIGNEE: SODE K
PATENT INFO: WO 2002073181 19 Sep 2002
APPLICATION INFO: WO 2002-JP2191 8 Mar 2002
PRIORITY INFO: JP 2001-281985 17 Sep 2001; JP 2001-70421 13 Mar 2001
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
OTHER SOURCE: WPI: 2002-713526 [77]
AB DERWENT ABSTRACT:
NOVELTY - An enzyme electrode containing an oxidoreductase and an electron transfer protein.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) sensors using the enzyme electrode as the working electrode; and (2) similar sensors with the glucose dehydrogenase and cytochrome c, or glucose dehydrogenase and cytochrome b562, chemically crosslinked onto the electrode when fabricated.
USE - The electrodes are applicable in (bio)sensors e.g. for measuring serum glucose value as well as cholesterol and fructosylamine concentrations.
ADVANTAGE - The electrodes can provide high response current value. EXAMPLE - After immobilization of PQQGDH and cytochrome c onto an electrode, the required enzyme electrode was constructed for producing a sensor for e.g. measuring glucose concentration in serum, with high response current value to glucose. (44 pages)

L2 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 2002:678725 HCAPLUS Full-text
DOCUMENT NUMBER: 138:234262
TITLE: The application of cytochromes as the interface molecule to facilitate the electron transfer for PQQ glucose dehydrogenase employing mediator type glucose sensor
AUTHOR(S): Okuda, Junko; Wakai, Junko; Sode, Koji
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo,

184-8588, Japan
SOURCE: Analytical Letters (2002), 35(9), 1465-1478
CODEN: ANALBP; ISSN: 0003-2719
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In order to improve the sensor response of mediator-type glucose enzyme electrode, we focused on the application of the electron transfer proteins, cytochromes, as interface mols. to facilitate the electron transfer from enzyme to artificial electron mediator. In this paper we used cytochrome c and cytochrome b562 for the improvement of sensor signal of glucose enzyme sensor employing glucose dehydrogenase harboring pyrroloquinoline quinone (PQQGDH). When sensors were operated using either potassium ferricyanide or 1-methoxy-5-methylphenazinium methylsulfate (mPMS) as the artificial electron mediator, the response was over 30-fold greater with the co-immobilization of either cytochrome c or cytochrome b562 than with PQQGDH alone. The impact of the cytochrome co-immobilization was dependent on the amount of cytochromes, indicating that these cytochromes facilitated the electron transfer from the PQQGDH redox center to the artificial electron mediators used in the sensor system. These results demonstrated the future application of cytochromes as an essential component for the improvement of sensor response in the redox enzymebased amperometric sensors.
OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:416272 HCAPLUS Full-text
DOCUMENT NUMBER: 131:181587
TITLE: Subunit analyses of a novel thermostable glucose dehydrogenase showing different temperature properties according to its quaternary structure
AUTHOR(S): Yamazaki, Tomohiko; Tsugawa, Wakako; Sode, Koji
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan
SOURCE: Applied Biochemistry and Biotechnology (1999), 77-79(Twentieth Symposium on Biotechnology for Fuels and Chemicals, 1998), 325-335
CODEN: ABIBDL; ISSN: 0273-2289
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors previously reported a novel glucose dehydrogenase (GDH) from the moderate thermophilic bacterium SM4 showing 2 peaks of optimum reaction temperature at .apprx.45° and at .apprx.75°. The resp. temperature peaks were found to derive (1) from a heterooligomeric enzyme constructed from 2 distinct peptides with an α subunit (67 kDa) and β subunit (43 kDa), and (2) a single peptide enzyme containing only an α subunit. The function of the 2 subunits in this GDH and their role in altering the temperature properties was investigated. The results of spectroscopic analyses indicated that the α subunit contained an unknown cofactor exhibiting specific fluorescence spectra similar to that of pyrroloquinoline quinone (PQQ), and that the β subunit was cytochrome c. Thus, the α subunit contains the catalytic center for glucose oxidation and the β subunit is an electron mediator. The results of urea denaturation and reconstitution experiment suggested that the dissociation of the heterooligomeric complex to a single peptide was reversible. Kinetic parameter analyses for glucose and the electron mediator also suggested that the β subunit was responsible for electron transfer from the catalytic center of the α subunit to the electron mediator. The reason for the alteration of the temperature

properties of GDH was the dissociation of the electron-transferring β subunit. The α subunit possessed high thermal stability, so that the optimum reaction temperature of the single-peptide GDH shifted to a higher temperature OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s (glucose dehydrogenase or PQQGDH) and cytochrome
L3 432 (GLUCOSE DEHYDROGENASE OR PQQGDH) AND CYTOCHROME

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4 251 DUP REM L3 (181 DUPLICATES REMOVED)

=> s l4 and fusion
L5 15 L4 AND FUSION

=> d l5 1-15 ibib ab

L5 ANSWER 1 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2004041270 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 14741705
TITLE: PQQ glucose dehydrogenase with novel electron transfer ability.
AUTHOR: Okuda Junko; Sode Koji
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, 2-24-16 Nakamachi, Koganei, 184-8588, Tokyo, Japan.
SOURCE: Biochemical and biophysical research communications, (2004 Feb 13) Vol. 314, No. 3, pp. 793-7.
Journal code: 0372516. ISSN: 0006-291X. L-ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 27 Jan 2004
Last Updated on STN: 18 Mar 2004
Entered Medline: 17 Mar 2004
AB PQQ glucose dehydrogenase from Acinetobacter calcoaceticus (GDH-B) is one of the most industrially attractive enzymes, as a sensor constituent for glucose sensing, because of its high catalytic activity and insensitivity to oxygen. We attempted to engineer GDH-B to enable electron transfer to the electrode in the absence of artificial electron mediator by mimicking the domain structure of the quinohemoprotein ethanol dehydrogenase (QH-EDH) from Comamonas testosteroni, which is composed of a PQQ-containing catalytic domain and a cytochrome c domain. We genetically fused the cytochrome c domain of QH-EDH to the C-terminal of GDH-B. The constructed fusion protein showed not only intra-molecular electron transfer, between PQQ and heme of the cytochrome c domain, but also electron transfer from heme to the electrode, thereby allowing the construction of a direct electron transfer-type glucose sensor.

L5 ANSWER 2 OF 15 MEDLINE on STN
ACCESSION NUMBER: 1999106650 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 9889976
TITLE: The biochemistry, physiology and genetics of PQQ and PQQ-containing enzymes.

AUTHOR: Goodwin P M; Anthony C
CORPORATE SOURCE: Division of Biochemistry and Molecular Biology, School of Biological Sciences, University of Southampton, UK.
CONTRACT NUMBER: (United Kingdom Wellcome Trust)
SOURCE: Advances in microbial physiology, (1998) Vol. 40, pp. 1-80. Ref: 221
Journal code: 0117147. ISSN: 0065-2911. L-ISSN: 0065-2911.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199902
ENTRY DATE: Entered STN: 16 Feb 1999
Last Updated on STN: 16 Feb 1999
Entered Medline: 2 Feb 1999

AB Pyrrolo-quinoline quinone (PQQ) is the non-covalently bound prosthetic group of many quinoproteins catalysing reactions in the periplasm of Gram-negative bacteria. Most of these involve the oxidation of alcohols or aldose sugars. PQQ is formed by fusion of glutamate and tyrosine, but details of the biosynthetic pathway are not known; a polypeptide precursor in the cytoplasm is probably involved, the completed PQQ being transported into the periplasm. In addition to the soluble methanol dehydrogenase of methylotrophs, there are three classes of alcohol dehydrogenases; type I is similar to methanol dehydrogenase; type II is a soluble quinohaemoprotein, having a C-terminal extension containing haem C; type III is similar but it has two additional subunits (one of which is a multihaem cytochrome c), bound in an unusual way to the periplasmic membrane. There are two types of glucose dehydrogenase; one is an atypical soluble quinoprotein which is probably not involved in energy transduction. The more widely distributed glucose dehydrogenases are integral membrane proteins, bound to the membrane by transmembrane helices at the N-terminus. The structures of the catalytic domains of type III alcohol dehydrogenase and membrane glucose dehydrogenase have been modelled successfully on the methanol dehydrogenase structure (determined by X-ray crystallography). Their mechanisms are likely to be similar in many ways and probably always involve a calcium ion (or other divalent cation) at the active site. The electron transport chains involving the soluble alcohol dehydrogenases usually consist only of soluble c-type cytochromes and the appropriate terminal oxidases. The membrane-bound quinohaemoprotein alcohol dehydrogenases pass electrons to membrane ubiquinone which is then oxidized directly by ubiquinol oxidases. The electron acceptor for membrane glucose dehydrogenase is ubiquinone which is subsequently oxidized directly by ubiquinol oxidases or by electron transfer chains involving cytochrome bc1, cytochrome c and cytochrome c oxidases. The function of most of these systems is to produce energy for growth on alcohol or aldose substrates, but there is some debate about the function of glucose dehydrogenases in those bacteria which contain one or more alternative pathways for glucose utilization. Synthesis of the quinoprotein respiratory systems requires production of PQQ, haem and the dehydrogenase subunits, transport of these into the periplasm, and incorporation together with divalent cations, into active quinoproteins and quinohaemoproteins. Six genes required for regulation of synthesis of methanol dehydrogenase have been identified in Methylobacterium, and there is evidence that two, two-component regulatory systems are involved.

L5 ANSWER 3 OF 15 MEDLINE on STN
ACCESSION NUMBER: 1993286127 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 8509415
TITLE: Topological analysis of quinoprotein glucose

dehydrogenase in Escherichia coli and its ubiquinone-binding site.
AUTHOR: Yamada M; Sumi K; Matsushita K; Adachi O; Yamada Y
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Japan.
SOURCE: The Journal of biological chemistry, (1993 Jun 15) Vol. 268, No. 17, pp. 12812-7.
Journal code: 2985121R. ISSN: 0021-9258. L-ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199307
ENTRY DATE: Entered STN: 23 Jul 1993
Last Updated on STN: 3 Feb 1997
Entered Medline: 13 Jul 1993

AB Topological structure of quinoprotein glucose dehydrogenase in the inner membrane of Escherichia coli was determined by constructing protein fusions with alkaline phosphatase or beta-galactosidase. Analysis of the fusions revealed that the dehydrogenase possesses five membrane-spanning segments, and the N-terminal and C-terminal portions resided at the cytoplasmic and periplasmic side of the membrane, respectively. These results agreed with the hydropathy profile based on its primary structure. The topological structure suggests that the predicted binding site of the prosthetic group pyrroloquinoline quinone is located at the periplasmic side and that the amino acid residues corresponding to those that were presumed to interact with ubiquinone in one subunit of mitochondrial NADH dehydrogenase also occur at the periplasmic side. When the purified glucose dehydrogenase and cytochrome o ubiquinol oxidase were reconstituted together with ubiquinone into liposomes, a membrane potential could be generated by the electron transfer at the site of the ubiquinol oxidase but not of the dehydrogenase. These results suggest that glucose dehydrogenase has a ubiquinone reacting site close to the periplasmic side of the membrane, and thus its electron transfer to ubiquinone appears to be incapable of forming a proton electrochemical gradient across the inner membrane of E. coli.

L5 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:1081076 HCAPLUS Full-text
DOCUMENT NUMBER: 151:334261
TITLE: MicroRNA miR-15a/16-1 modulated genes (gene signatures) associated with human chronic lymphocytic leukemia (CCL) and uses thereof
INVENTOR(S): Croce, Carlo M.; Calin, George A.
PATENT ASSIGNEE(S): The Ohio State University Research Foundation, USA
SOURCE: PCT Int. Appl., 256 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2009108856	A2	20090903	WO 2009-US35463	20090227
WO 2009108856	A3	20100114		

W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,

KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,
IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI,
SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA
PRIORITY APPLN. INFO.: US 2008-67406P P 20080228
AB Methods and compns. for the diagnosis, prognosis and/or treatment of leukemia associated diseases are disclosed. Specifically, a high-throughput profiling of genes modulated by miR-15a/16-1 in a leukemic cell line model (MEG-01) and in primary CLL samples are produced. By combining exptl. and bioinformatics data, a miR-15a/16-1-gene signature in leukemic cells is identified. By examining the Gene Ontol. (GO) database, a significant enrichment in cancer genes (such as MCL1, BCL2, ETS1, or JUN) that directly or indirectly affect apoptosis and cell cycle is found. Among the components of the miR-15a/16-1 signature, a statistically significant enrichment in AU-rich elements (AREs) is observed

L5 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2008:1334623 HCAPLUS Full-text
DOCUMENT NUMBER: 150:1841
TITLE: Construction and Characterization of Direct Electron Transfer-Type Continuous Glucose Monitoring System Employing Thermostable Glucose Dehydrogenase Complex
AUTHOR(S): Yamazaki, Tomohiko; Okuda-Shimazaki, Junko; Sakata, Chikako; Tsuya, Taiki; Sode, Koji
CORPORATE SOURCE: Biomaterials Center, National Institute for Materials Science (NIMS), Namiki, Tsukuba, Ibaraki, Japan
SOURCE: Analytical Letters (2008), 41(13), 2363-2373
CODEN: ANALBP; ISSN: 0003-2719
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We demonstrated a direct electron transfer-type enzyme electrode using thermostable FAD-glucose dehydrogenase (FADGDH) consisting of three distinct subunits (an FAD-containing catalytic subunit, a cytochrome subunit, and a chaperone-like subunit) and its application in developing a continuous glucose monitoring (CGM) system without a synthetic electron mediator. An FADGDH-immobilized electrode showed current signals according to glucose concentration in the absence of a synthetic electron mediator. The sensor containing the FADGDH complex showed a stable response for 72 h at 37°. Furthermore, the CGM response was well fitted to the gradient change in the glucose concentration obtained from system calibration.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1349195 HCAPLUS Full-text
DOCUMENT NUMBER: 146:141179
TITLE: Production and application of plasmid pET28a(+)-P450BM3-gdh0310 in bioconversion of indole to indigo
INVENTOR(S): Mei, Yuehe; Lu, Yan
PATENT ASSIGNEE(S): Zhejiang University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 17pp.

CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1880459	A	20061220	CN 2006-10050388	20060418
CN 100429314	C	20081029		
PRIORITY APPLN. INFO.:			CN 2006-10050388	20060418

AB The title plasmid pET28a(+)-P450BM3-gdh0310 is produced by inserting P 450 BM3 gene and glucose dehydrogenase gene into pET28a(+) expression vector. After transferring the recombinant plasmid into E. coli BL21, the recombinant bacterial strain can express cytochrome P 450 monooxygenase and glucose dehydrogenase. The invention discloses the sequence from the promoter of P 450 BM3 gene to the terminator of glucose dehydrogenase gene. The recombinant bacterial strain can cooperatively catalyzing the bioconversion of indole to indigo with an increased catalytic activity (22-27 times). The invention can be expected to use for manufacturing indigo dye by bioconversion.

L5 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:120414 HCAPLUS Full-text
DOCUMENT NUMBER: 144:184702
TITLE: Gene expression profiles for identifying patients at risk of developing encephalitis following immunotherapy for Alzheimer's disease
INVENTOR(S): O'Toole, Margot; Dorner, Andrew J.; Janszen, Derek B.; Slonim, Donna K.; Mounts, William M.; Reddy, Padmalatha S.; Hill, Andrew A.
PATENT ASSIGNEE(S): Wyeth, USA
SOURCE: PCT Int. Appl., 298 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006014755	A2	20060209	WO 2005-US25771	20050720
WO 2006014755	A3	20060413		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CA 2571856	A1	20060209	CA 2005-2571856	20050720
US 20060073496	A1	20060406	US 2005-186236	20050720
EP 1784509	A2	20070516	EP 2005-795582	20050720
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				

PRIORITY APPLN. INFO.: US 2004-589877P P 20040720
US 2005-672716P P 20050418
WO 2005-US25771 W 20050720

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention generally relates to a method for an improved treatment for Alzheimer's disease (AD) using immunotherapy, e.g., immunotherapy targeting β amyloid (Aβ) and immunotherapy based on AN1792. By ANOVA and GeneCluster analyses of Affymetrix U133A GeneChip data, statistically significant assocns. were detected between the gene expression profiles of peripheral blood mononuclear cells of patients prior to immunization with AN1792 and the post-immunization development of encephalitis. In addition, statistically significant assocns. were found between the pre-immunization gene expression profile in PBMCs and post-immunization development of IgG response. The method allows for predicting an adverse clin. response, and therefore allows for an improved safety profile of AN1792. In another embodiment, the method allows for predicting a favorable clin. response, and therefore allows for an improved efficacy profile of AN1792. The methods of the present invention may be combined to predict a favorable clin. response and the lack of an adverse clin. response.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1154777 HCAPLUS Full-text
DOCUMENT NUMBER: 143:433974
TITLE: Gene expression profiling and markers for use in the assessment of hepatotoxicity
INVENTOR(S): Porter, Mark; Higgs, Brandon; Mendrick, Donna; Elashoff, Michael
PATENT ASSIGNEE(S): Gene Logic, Inc., USA
SOURCE: PCT Int. Appl., 264 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005100989	A2	20051027	WO 2005-US11532	20050407
WO 2005100989	A3	20061130		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2562343	A1	20051027	CA 2005-2562343	20050407
EP 1751303	A2	20070214	EP 2005-736350	20050407
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU				
JP 2007533005	T	20071115	JP 2007-507445	20050407

PRIORITY APPLN. INFO.: US 2004-559949P P 20040407
WO 2005-US11532 W 20050407

AB Methods of using the effects of a substance on gene expression profiles are described for use in assessing their toxicity, especially hepatotoxicity, are described. The invention also includes microarrays, computer systems comprising the toxicity prediction models, as well as methods of using the computer systems by remote users for determining the toxicity of test agents. A database of gene expression profiles for rat liver using a broad range of drugs, com. chems., and known poisons is developed. OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1020555 HCAPLUS Full-text
DOCUMENT NUMBER: 143:320266
TITLE: Genes with differential expression profile between human dental pulp stem cells and mesenchymal stem cells and use for regenerating tooth germ
INVENTOR(S): Ueda, Minoru; Yamada, Yoichi
PATENT ASSIGNEE(S): Hitachi Medical Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 246 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005253442	A	20050922	JP 2004-111582	20040309

PRIORITY APPLN. INFO.: JP 2004-111582 20040309

AB The present invention relates to a group of genes whose expression profile are different between human dental pulp stem cells and mesenchymal stem cells, as well as a method for regenerating tooth germ using these genes. According to the present invention, the gene expression profiles and cluster anal. between human dental pulp stem cells (hDPSCs) and mesenchymal stem cells (hMSCs) as representative populations of odontoprogenitor and osteoprogenitor cell were revealed, and a group of genes whose expression profile are different between human dental pulp stem cells and mesenchymal stem cells was identified. By utilizing the groups of the genes of the present invention together with the dental pulp stem cells and mesenchymal stem cells, hard tissue such as tooth germ, dental pulp, dentin or bone can be regenerated. The present inventors investigated the gene expression profiles and cluster anal. between human dental pulp stem cells (hDPSCs) and mesenchymal stem cells (hMSCs) as representative populations of odontoprogenitor and osteoprogenitor cells, resp. At first, the present inventors confirmed the differential expression of Alkaline phosphatase (ALP) activity, Dentin matrix protein 1 (DMP 1), Dentin phosphosialoprotein (DSPP) using by real time reverse-transcriptase polymerase chain reaction (RT-PCR) in total RNA from primary cultures. The number of genes in hDPSCs(I) that were up-regulated by 2>-fold, compared to hMSCs, was 614 (Table, IV). On the other band, the number of genes down regulated by <2-fold in hDPSCs (I) was 296 (Table III, IV).

L5 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:300480 HCAPLUS Full-text
DOCUMENT NUMBER: 142:370305
TITLE: Glucose dehydrogenase/

cytochrome fusion protein for glucose sensor
INVENTOR(S): Sode, Koji
PATENT ASSIGNEE(S): Japan
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005030807	A1	20050407	WO 2004-JP14575	20040928
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
GB 2421951	A	20060712	GB 2006-6955	20040928
GB 2421951	B	20080227		
US 20070267301	A1	20071122	US 2006-574085	20060330

PRIORITY APPLN. INFO.: JP 2003-340092 A 20030930
WO 2004-JP14575 W 20040928
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB A pyrroloquinolinequinone glucose dehydrogenase (PQQGDH)/cytochrome fusion protein is disclosed. As PQQGDH, an use can be made of, for example, water-soluble PQQGDH derived from Acinetobacter calcoaceticus. As cytochrome, an use can be made of, for example, an electron transport domain of quinohemoprotein ethanol dehydrogenase of Comamonas testosteroni. In this fusion protein, an intramol. electron transfer from PQQ being an oxidation-reduction center to cytochrome occurs. Accordingly, a direct electron transport-type glucose sensor not needing any electron mediator can be produced by the use of the fusion protein.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:702629 HCAPLUS Full-text
DOCUMENT NUMBER: 142:151093
TITLE: Engineered PQQ glucose dehydrogenase -based enzyme sensor for continuous glucose monitoring
AUTHOR(S): Okuda, Junko; Wakai, Junko; Igarashi, Satoshi; Sode, Koji
CORPORATE SOURCE: Department of Biotechnology, Faculty of Technology, Tokyo University of Agriculture and Technology, Tokyo, Japan
SOURCE: Analytical Letters (2004), 37(9), 1847-1857
CODEN: ANALBP; ISSN: 0003-2719
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Continuous glucose monitoring (CGM) is expected to become an ideal way to monitor the glycemic level of diabetic patients. A recent trend in the disposable

self blood glucose sensing development has been the use of pyrroloquinoline quinone-harboring glucose dehydrogenase (PQQGDH). However, due to a number of limitations of PQQGDH, conventionally utilized glucose oxidase (GOD) remains widely utilized in CGM. Two major problems that arose in the application of PQQGDH for CGM are the poor stability and its requirement for artificial electron acceptors for electrochem. measurement. To solve these problems, we investigated the amenability of our engineered PQQGDH Ser415Cys, which has a far superior thermal stability over the wild-type enzyme, for the CGM system, and the applicability of cyt b562 as the electron mediator to construct a CGM system free of synthetic mediator. As a result, the operational stability of CGM system employing Ser415Cys co-immobilized with cyt b562 was far superior to that of the wild-type enzyme-based electrode, with more than 60% of the initial response observed after 72 h at 37°. We achieved the successful application of PQQGDH in continuous operation without a significant decrease in the sensor signal. OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:542873 HCAPLUS Full-text
DOCUMENT NUMBER: 141:273433
TITLE: Molecular engineering of PQQGDH and its applications
AUTHOR(S): Igarashi, Satoshi; Okuda, Junko; Ikebukuro, Kazunori; Sode, Koji
CORPORATE SOURCE: National Institute for Materials Science, 1-1, Namiki, Tsukuba, Ibaraki, 305-0044, Japan
SOURCE: Archives of Biochemistry and Biophysics (2004), 428(1), 52-63
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Pyrroloquinolinequinone glucose dehydrogenases (PQQGDHs) are the most industrially attractive enzymes, especially PQQGDH-B employing glucose sensors are already in the market. To develop an ideal glucose sensor enzyme, therefore we have constructed and characterized several engineered PQQGDH-Bs. The engineered enzymes will give effective information about unknown properties on PQQGDH-B such as reaction mechanism, substrate inhibition system, and neg. cooperativity. Of equal importance, the application of the thermostable PQQGDH-B is not limited to the development of continuous glucose monitoring system, biofuel cell, and DNA sensors. In addition, co-immobilizing electron transfer protein such as cytochrome c and cytochrome b562, we have developed the sensor system that showed 30-fold greater response. Furthermore, mimicking the domain structure of QH-EDH, we constructed fusion protein, QH-GDH, allowing the construction of a direct electron transfer-type glucose sensor. To the future, combining the engineered PQQGDH-B with the application of cytochromes instead of artificial electron mediator, we will construct and develop the ideal glucose sensor and other applications.
OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)
REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:293978 HCAPLUS Full-text
DOCUMENT NUMBER: 136:337341
TITLE: Materials and methods to modulate ligand binding/enzymic activity of α/β proteins containing an allosteric regulatory site

INVENTOR(S): Stauton, Donald E.
PATENT ASSIGNEE(S): Icos Corporation, USA
SOURCE: PCT Int. Appl., 163 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002031511	A2	20020418	WO 2001-US32047	20011012
WO 2002031511	A3	20030313		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2425581	A1	20020418	CA 2001-2425581	20011012
AU 2002013196	A	20020422	AU 2002-13196	20011012
US 20030088061	A1	20030508	US 2001-976935	20011012
EP 1325341	A2	20030709	EP 2001-981560	20011012
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004511496	T	20040415	JP 2002-534845	20011012
MX 2003003207	A	20040326	MX 2003-3207	20030411

PRIORITY APPLN. INFO.: US 2000-239750P P 20001012
WO 2001-US32047 W 20011012
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Methods of modulating binding between an α/β protein and a binding partner are provided, along with methods of identifying modulators and their use. The methods comprise contacting the α/β protein with an allosteric effector mol. which binds to an allosteric site of the α/β protein and alters the conformation of the α/β protein such that the binding of the α/β protein to a binding partner is modulated. Thus, a primary screen for inhibitors of the classical pathway complement protein C2 and alternative pathway complement protein factor B involving modifications of standard hemolytic CH50 and AH50 assays in a microtiter plate format was carried out. Lead compds. identified in this screen were submitted to a second screening using purified complement proteins to determine which stage of complement activation the compds. inhibited. Five diaryl sulfides were identified. Numerous other assays, e.g., to identify inhibitors of integrin αEβy interaction with E cadherin, inhibitors of Rac1 GDP-GTP exchange, or antagonists of E. coli 6-hydroxymethyl-7,8-dihydropterin pyrophosphokinase, were conducted as well. OS.CITING REF COUNT: 5
THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD
(5 CITINGS)

L5 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2001:473659 HCAPLUS Full-text
DOCUMENT NUMBER: 135:205729
TITLE: Microarray analysis of the in vivo effects of hypophysectomy and growth hormone treatment on gene expression in the rat
AUTHOR(S): Flores-Morales, Amilcar; Stahlberg, Nina; Tollet-Egnell, Petra; Lundeberg, Joakim; Malek, Renae L.; Quackenbush, John; Lee, Norman H.; Norstedt,

Gunnar
CORPORATE SOURCE: Department of Molecular Medicine, Karolinska Institute, Stockholm, 17176, Swed.
SOURCE: Endocrinology (2001), 142(7), 3163-3176
CODEN: ENDOAO; ISSN: 0013-7227
PUBLISHER: Endocrine Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors used cDNA microarrays containing 3000 different rat genes to study the consequences of severe hormonal deficiency (hypophysectomy) on the gene expression patterns in heart, liver, and kidney. Hybridization signals were seen from a majority of the arrayed cDNAs; nonetheless, tissue-specific expression patterns could be delineated. Hypophysectomy affected the expression of genes involved in a variety of cellular functions. Between 16-29% of the detected transcripts from each tissue changed expression level as a reaction to this condition. Chronic treatment of hypophysectomized animals with human GH also caused significant changes in gene expression patterns. The study confirms previous knowledge concerning certain gene expression changes in the above-mentioned situations and provides new information regarding hypophysectomy and chronic human GH effects in the rat. Furthermore, the authors have identified several new genes that respond to GH treatment. The results represent a first step toward a more global understanding of gene expression changes in states of hormonal deficiency.
OS.CITING REF COUNT: 65 THERE ARE 65 CAPLUS RECORDS THAT CITE THIS RECORD (65 CITINGS)
REFERENCE COUNT: 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 15 OF 15 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:252029 SCISEARCH Full-text
THE GENUINE ARTICLE: 412TM
TITLE: Transmembrane orientation and topology of the NADH : quinone oxidoreductase putative quinone binding subunit NuoH
AUTHOR: Hagerhall C (Reprint)
CORPORATE SOURCE: Univ Lund, Dept Biochem, S-22100 Lund, Sweden (Reprint)
AUTHOR: Roth R
COUNTRY OF AUTHOR: Sweden
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA-BIOENERGETICS, (2 APR 2001) Vol. 1504, No. 2-3, pp. 352-362.
ISSN: 0005-2728.
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 45
ENTRY DATE: Entered STN: 6 Apr 2001
Last Updated on STN: 6 Apr 2001
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB NADH:quinone oxidoreductase, or Complex I, is a multi-subunit membrane-bound enzyme in the respiratory chain of many pro- and eukaryotes. The enzyme catalyzes the oxidation of NADH and donates electrons to the quinone pool, coupled to proton translocation across the membrane, but the mechanism of energy transduction is not understood. In bacteria the enzyme consists of 14 subunits, seven membrane spanning and seven protruding from the membrane. The hydrophobic NuoH (NQO8, ND1, NAD1, NdhA) subunit is seemingly involved in quinone binding. A homologous, structurally and most likely functionally similar subunit is also found in F420H2 oxidoreductases and in complex membrane-bound hydrogenases. We have made theoretical analyses of NuoH and NuoH-like polypeptides and experimentally analyzed the

transmembrane topology of the NuoH subunit from Rhodobacter capsulatus by constructing and analyzing alkaline phosphatase fusion proteins. This demonstrated that the NuoH polypeptide has eight transmembrane segments, and four highly conserved hydrophilic sequence motifs facing the inside, bacterial cytoplasm. The N-terminal and C-terminal ends are located on the outside of the membrane. A topology model of NuoH based on these results is presented, and implications from the model are discussed.

```
=> d his

     (FILE 'HOME' ENTERED AT 13:54:27 ON 21 JUN 2010)

     FILE 'MEDLINE, HCAPLUS, BIOSIS, BIOTECHDS, SCISEARCH, EMBASE' ENTERED AT
     13:55:14 ON 21 JUN 2010
L1            24 S (PYRROLOQUINOLINE QUINONE GLUCOSE DEHYDROGENASE OR PQQGDH) AN
L2            11 DUP REM L1 (13 DUPLICATES REMOVED)
L3           432 S (GLUCOSE DEHYDROGENASE OR PQQGDH) AND CYTOCHROME
L4           251 DUP REM L3 (181 DUPLICATES REMOVED)
L5            15 S L4 AND FUSION

=> log y
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               105.07     105.29

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)      SINCE FILE      TOTAL
                                                   ENTRY    SESSION
CA SUBSCRIBER PRICE                               -16.15     -16.15

STN INTERNATIONAL LOGOFF AT 14:05:02 ON 21 JUN 2010
```